

**AMENDMENT TO THE CLAIMS:**

The following claim set replaces all prior versions, and listings, of claims in the application:

1. (original) Process for the preparation of a shaped part of an ultrahigh molecular weight polyethylene (UHMWPE) by heating the UHMWPE to a temperature above the melting temperature, shaping the resulting melt, and cooling the melt to a temperature below the melting temperature, wherein
  - a) the UHMWPE has a weight average molecular weight ( $M_w$ ) of at least  $1 \times 10^6$  g/mol,
  - b) during the shaping the storage plateau modulus ( $G^*$ ) of the UHMWPE is kept at a value of at most 1.5 MPa,
  - c) whereafter, before the cooling, the  $G^*$  is raised to its final value.
2. (previously presented) Process according to claim 1, comprising heating the UHMWPE at a heating rate ( $\Theta$ ) which is at most 1 K/minute, as of a temperature of 350K.
3. (previously presented) Process according to claim 1, comprising heating the UHMWPE at a heating rate ( $\Theta$ ) which is at most 5 K/minute.
4. (original) Process according to claim 2, wherein the MWD is between and inclusive 1.2 -3.0.
5. (previously presented) Process according to claim 1, wherein the initial value of  $G^*$  is at most 0.75 MPa.
6. (previously presented) Process according to claim 1, wherein  $G^*$  builds up to a value of 1.5 MPa at a speed ( $\Psi$ ) less than 3 MPa/hour.

7. (original) Process according to claim 6, wherein  $\Psi$  is less than 0.5 MPa/hour.
8. (previously presented) Process according to claim 1, wherein the UHMWPE is obtained through a solution or suspension polymerization at a temperature of between 225 and 325 K, using an unsupported catalyst in a concentration of less than  $1 \times 10^{-4}$  mol/L.
9. (previously presented) Process according to claim 1, wherein the UHMWPE is either a homopolymer of ethylene, or a copolymer of ethylene with another  $\alpha$ -olefin or cyclic olefin.
10. (original) Process according to claim 8, wherein the polymerisation takes place at a temperature between and inclusive 260 and 305 K.
11. (previously presented) Process according to claim 1, wherein the UHMWPE is annealed during the heating, at a temperature of not less than 398 K and not more than 410 K.
12. – 14. (canceled)
15. (new) Process for the production of a shaped part of an ultrahigh molecular weight polyethylene (UHMWPE) comprising the steps of:
  - (a) heating at a heating rate ( $\Theta$ ) which is at most 1 K/minute an ultrahigh molecular weight polyethylene (UHMWPE) having a weight average molecular weight ( $M_w$ ) of at least  $1 \times 10^6$  g/mol and having an initial storage plateau modulus ( $G^*$ ) value of at most 0.75 MPa to a temperature above the melting temperature of the UHMWPE to form a processable melt thereof;
  - (b) allowing the initial  $G^*$  value of the UHMWPE melt to build at a at a speed ( $\Psi$ ) of less than 3 MPa/hour to a processing  $G^*$  value of at most 1.5 MPa;

- (c) shaping the melt of the UHMWPE while maintaining the processing  $G^*$  value of at most 1.5 MPa to form a shaped part thereof; and thereafter
  - (d) prior to cooling, raising the  $G^*$  value of the shaped part formed according to step (c) from a  $G^*$  value of at most 1.5 MPa to a final  $G^*$  value of about 2.0 MPa; and then
  - (e) cooling the shaped part.
16. (new) Process according to claim 15, wherein step (a) is practiced by heating the UHMWPE at a heating rate ( $\Theta$ ) which is at most 5 K/minute.
17. (new) Process according to claim 15, wherein the UHMWPE has a molecular weight distribution (MWD) of between 1.2 -3.0, inclusive.
18. (new) Process according to claim 15, wherein step (b) is practiced by allowing the initial  $G^*$  value of the UHMWPE to build at a at a speed ( $\Psi$ ) of less than 0.5 MPa/hour.
19. (new) Process according to claim 15, wherein the UHMWPE is the solution or suspension polymerization product obtained at a polymerization temperature of between 225 and 325 K, using an unsupported catalyst in a concentration of less than  $1 \times 10^{-4}$  mol/L.
20. (new) Process according to claim 19, wherein the polymerisation takes place at a temperature between and inclusive 260 and 305 K.
21. (new) Process according to claim 15, wherein the UHMWPE is either a homopolymer of ethylene, or a copolymer of ethylene with another  $\alpha$ -olefin or cyclic olefin.

22. (new) Process according to claim 15, wherein the heating step (a) includes annealing the UHMWPE at a temperature of not less than 398 K and not more than 410 K.